

**IN THE CLAIMS:**

Claims 1-20 (Canceled)

21. (Currently Amended) A semiconductor device, comprising:

a co-doped germanium buried layer substantially of germanium having a dopant concentration ranging from about 1E15 atoms/cm<sup>3</sup> to about 1E20 atoms/cm<sup>3</sup> located over a doped substrate having a dopant concentration ranging from about 1E14 atoms/cm<sup>3</sup> to about 1E15 atoms/cm<sup>3</sup>, said buried layer co-doped with germanium and another p-type dopant;  
a doped epitaxial layer having a dopant concentration ranging from about 1E14 atoms/cm<sup>3</sup> to about 1E15 atoms/cm<sup>3</sup> located over said co-doped germanium buried layer.

22. (Canceled)

23. (Currently Amended) The semiconductor device as recited in Claim 21 wherein  
said co-doped germanium buried layer includes a said another p-type dopant is boron.

24. (Currently Amended) The semiconductor device as recited in Claim 23 wherein  
said p-type dopant is boron 21 wherein a dopant concentration of said buried layer ranges from about 1E15 atoms/cm<sup>3</sup> to about 1E20 atoms/cm<sup>3</sup>, a dopant concentration of the doped substrate ranges from about 1E14 atoms/cm<sup>3</sup> to about 1E15 atoms/cm<sup>3</sup>, and a dopant concentration of the doped epitaxial layer ranges from about 1E14 atoms/cm<sup>3</sup> to about 1E15 atoms/cm<sup>3</sup>.

25. (Currently Amended) The semiconductor device as recited in Claim 21 wherein said co-doped germanium buried layer has a germanium concentration ranging from about 2E20 atoms/cm<sup>3</sup> to about 7E20 atoms/cm<sup>3</sup>.

26. (Currently Amended) The semiconductor device as recited in Claim 21 wherein said co-doped germanium buried layer has a thickness ranging from about 1  $\mu\text{m}$  to about 10  $\mu\text{m}$ .

27. (Currently Amended) The semiconductor device as recited in Claim 21 wherein said doped substrate, said co-doped germanium buried layer, and said epitaxial layer collectively have a thickness ranging from about 2  $\mu\text{m}$  to about 20  $\mu\text{m}$ .

Claims 28-36 (Canceled)

37. (Currently Amended) An integrated circuit, comprising:  
a co-doped germanium buried layer substantially of germanium having a dopant concentration ranging from about 1E15 atoms/cm<sup>3</sup> to about 1E20 atoms/cm<sup>3</sup> located over a doped substrate having a dopant concentration ranging from about 1E14 atoms/cm<sup>3</sup> to about 1E15 atoms/cm<sup>3</sup>, said buried layer co-doped with germanium and another p-type dopant;  
a doped epitaxial layer having a dopant concentration ranging from about 1E14 atoms/cm<sup>3</sup> to about 1E15 atoms/cm<sup>3</sup> located over said co-doped germanium buried layer;

transistors located over said doped epitaxial layer; and  
interconnects located within interlevel dielectric layers located over said transistors,  
which ~~connect~~ provide connection to said transistors to form an operational integrated circuit.

38. (Currently Amended) The integrated circuit as recited in Claim 37 wherein said  
~~another p-type dopant is co-doped germanium buried layer further includes boron.~~

39. (Previously Presented) The integrated circuit as recited in Claim 37 wherein said  
buried layer has a germanium concentration ranging from about 2E20 atoms/cm<sup>3</sup> to about 7E20  
atoms/cm<sup>3</sup>.

40. (Original) The integrated circuit as recited in Claim 37 further including  
additional active and passive devices.